

1 I claim:

2 1. A process for utilizing a commercially available condensation polymer, without
3 degradation, to modify a modifying polymer to a higher molecular weight final
4 polymer, said process comprising the steps of first synthesizing a modifying polymer
5 from a plurality of monomers and second transesterifying the modifying polymer
6 with said commercially available condensation polymer at a quantity predetermined
7 by the end use application to produce said higher molecular weight final polymer.

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9 2. The process of Claim 1 wherein said commercially available condensation
10 polymer is polyethylene terephthalate.

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12 3. The process of Claim 1 wherein said commercially available condensation
13 polymer is polyethylene naphthalate.

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15 4. The process of Claim 1 wherein said higher molecular weight final polymer is a
16 polyol.

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18 5. The process of claim 1 wherein said higher molecular weight final can be used as
19 a hot melt adhesive.

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21 6. The process of claim 1 wherein said higher molecular weight final polymer can be

1 used as a film forming coating.

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3 7. The process of claim 1 wherein said higher molecular weight final polymer can be
4 used as a powder coating resin or component of a fusible coating system.

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6 8. The process of Claim 1 wherein said higher molecular weight final polymer can
7 be used as a flexible film.

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9 9. The process of Claim 1 wherein said higher molecular weight polymer can used
10 as an unsaturated resin for casting.

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12 10. The process of Claim 3 further comprising the step of reacting said polyol with
13 an isocyanate to produce a polyurethane.

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15 11. A process for utilizing a commercially available condensation polymer, without
16 degradation, to modify a modifying polymer to a higher molecular weight final
17 polymer, said final polymer having a molecular weight greater than 192 g/mol, said
18 process comprising the steps of first synthesizing a modifying polymer from a
19 plurality of monomers, said first synthesizing step occurring at a reaction time of
20 about 1 hour to about 5 hours and at a temperature of about 150 degrees
21 Centigrade to about 270 degrees Centigrade, and second transesterifying the

1 modifying polymer with said commercially available condensation polymer at a
2 quantity predetermined by the end use application, said second transesterifying step
3 occurring at a reaction time of less than about 3 hours and at a temperature of
4 about 200 degrees Centigrade to about 290 degrees Centigrade to produce said
5 higher molecular weight final polymer.

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7 12. The process of Claim 11 wherein said commercially available condensation
8 polymer is polyethylene terephthalate.

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10 13. The process of Claim 11 wherein said commercially available condensation
11 polymer is polyethylene naphthalate.

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13 14. The process of Claim 11 wherein said higher molecular weight final polymer is a
14 polyol.

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16 15. The process of claim 11 wherein said higher molecular weight final can be used
17 as a hot melt adhesive.

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19 16. The process of claim 11 wherein said higher molecular weight final polymer can
20 be used as a film forming coating.

- 1 17. The process of claim 11 wherein said higher molecular weight final polymer can
2 be used as a powder coating resin or component of a fusible coating system.
3
- 4 18. The process of Claim 11 wherein said higher molecular weight final polymer can
5 be used as a flexible film.
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- 7 19. The process of Claim 11 wherein said higher molecular weight polymer can
8 used as an unsaturated resin for casting.
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- 10 20. The process of Claim 13 further comprising the step of reacting said polyol with
11 an isocyanate to produce a polyurethane.